

Seismic reflection profiling across the Itoigawa-Shizuoka Tectonic Line around Suwa Lake, central Japan

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The Itoigawa-Shizuoka Tectonic Line (ISTL) in Central Japan is a fault zone with a very high slip rate in Pliocene-Quaternary time. The structure and behavior of ISTL is highly variable along strike, with a prominent segment boundary around Suwa Lake. In order to reveal the overall structure of ISTL, a research project consisting mainly of seismic-reflection and gravity surveys started in 2005. In 2006 we carried out high-resolution seismic reflection profiling along 4 lines across the central part of ISTL around Suwa Lake. A vibroseis truck was used as the signal source; receiver and shot intervals were 10 meters. We also made gravity survey along the seismic lines in order to constrain geologic interpretation of seismic profiles. Following results were obtained from tentatively processed seismic and gravity data: (1) On the Shiojiri line north of Suwa Lake, ISTL is west-vergent (thrust and left slip on east-dipping master fault), as has been observed at Matsumoto and Omachi. (2) In contrast, on the Shimosuwa and Chino lines south of the lake, the master fault is likely to be west-dipping with normal and left-slip on it.